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ABSTRACT

This document addresses the complex issues surrounding the production, selection, and use of textbooks in the context of the current educational reform movement. The first section discusses the need for textbook reform, examining the problems associated with their content, presentation, and supplementary materials. The second section discusses the difficulties attendant upon improving textbooks, since no one group has sole responsibility for improving instructional materials. Included is a discussion of how textbooks are used in the classroom, how selection is influenced by diverse curricular requirements, and how testing requirements, availability of funding, sales and promotional costs, market conditions, readability formulas, physical standards, and collective authorship complicate the process of textbook improvement. The third section discusses pitfalls of the textbook adoption process at state and local levels. Political influences in the appointment of textbook review committees are discussed, along with the problems that arise with textbook selection criteria. The final section addresses "the real cost of poor textbooks" in light of their long-range effects on teachers and students. This is followed by a list of options for administrators, policymakers, teachers, publishers, and professional organizations regarding the adoption process, assistance and resources, evaluation, and intergroup communication. (TE)

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HOW CAN WE IMPROVE TEXTBOOKS?

SI-86-2

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The Education Commission of the States is a nonprofit, nationwide interstate compact formed in 1965. The primary purpose of the commission is to assist governors, state legislators, state education officials and others to develop policies to improve the quality of education at all levels. Forty-eight states, the District of Columbia, American Samoa, Puerto Rico and the Virgin Islands are members. The ECS central offices are at 1860 Lincoln Street, Suite 300, Denver, Colorado 80295. The Washington office is in the Hall of the States, 444 North Capitol Street, N.W., Suite 248, Washington, D.C. 20001.

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The project began in the spring 1985 with a national survey of researchers, teachers, publishers, state education leaders and textbook authors to identify the most pressing problems related to the development and selection of high quality instructional materials. The results of this survey are presented in What's Wrong With Mathematics Textbooks? Views from the Field.

Based on what we learned from this survey, a review of the literature, extensive conversations with knowledgeable researchers, case studies of the adoption process in several states and state technical assistance activities, a description of problems with instructional materials and their causes is presented in this document. Recommendations to different role groups to alleviate some of these problems are also included.

We wish to thank the many experts who participated in our survey and the state education policy makers we worked with during our technical assistance activities. We are also grateful to the Department of Education for funding this project.

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INTRODUCTION

"Textbooks and other tools of learning and teaching should be upgraded and updated to assure more rigorous content." What has happened since this challenge was issued in the 1983 report, A Nation At Risk? The good news doesn't receive much press, but there are nevertheless many dedicated groups and individuals working to meet the challenge of textbook reform.

- Professional organizations, such as the National Council of Teachers of Mathematics (NCTM) and other subject matter groups have developed materials to help local districts make appropriate selection of textbooks. These include guides on how to select materials and discipline-specific selection criteria.

- The Association of American Publishers (AAP) sponsors periodic meetings to bring together publishers and textbook authors with education researchers and curriculum experts to learn how to incorporate the results of recent research into textbooks.

- Other national groups are taking a close look at textbooks. People for the American Way, for example, published a critical review of biology textbooks on the market in 1985, and has followed up with a review of major U.S. history textbooks. The American Association for the Advancement of Science has published a review of 1985 biology materials. These reviews are designed to help state and local adoption committees to make more informed decisions about textbooks during their own review processes.

- Many states are placing greater emphasis and resources on teacher inservice training and support. As these teachers reach higher levels of skill and confidence the expectation is that they will help change the textbook market by choosing more challenging books and by using more supplemental materials.

The production, selection and use of textbooks involves complex issues and many different people who carry out vastly different roles. In fact, complexity is one of the biggest stumbling blocks to change. No single initiative by any one group or state will reform textbooks. If they are to improve, publishers, state and local administrators, and teachers must act in concert. All have a part to play in textbook reform.

State regulations, market forces, teachers' skills and resources are some of the biggest problems facing textbook reform. Twenty-two states require local districts to select books from a state established adoption list. These 22 states have a diverse set of requirements and regulations which publishers must meet for their books to be considered for each state adoption. Economics dictate that publishers produce a single series to meet the requirements of as many of these states as possible. And to increase potential sales, content is geared to the requirements of two or three states representing the largest markets. State resources allocated to the purchase of textbooks is small and publishers cannot make a profit if they develop unique textbooks to meet each state's requirements. The result is a textbook or textbook series that is crammed with content usually at the expense of concepts and context.

Other education issues presently command more attention than the textbook problem. But education watchers warn that it is only a matter of time before the critical eye of public attention focuses on textbooks and the curriculum they define. Policy makers

should take a close look at how well (or how poorly) the complex process of textbook development and adoption really works. Now is the time to begin understanding the complexity of the issues and laying the foundations for change.

THE NEED FOR TEXTBOOK REFORM

Students depend on textbooks and related materials for more than 90% of their classroom time: teachers and administrators depend on published materials so heavily that texts have become the de facto curriculum in many areas. Since textbooks are emphasized so heavily, a close look at problems associated with their content, presentation and supplementary materials is warranted.

Content Problems

Many topics are covered but rarely in depth.

Textbooks themselves are huge, in part because publishers feel a need to at least "mention" every topic that appears on the lengthy and diverse "curriculum frameworks" required or recommended by the major markets. These frameworks are part of the state bid specifications given to publishers. Since publishers can afford to produce only a single series, the books attempt to include every topic on every state's list. This helps assure their books will make the state adoption list since states ask publishers to correlate their curriculum guidelines with the content of each submitted book or series.

The effect is that few topics are covered in a way that encourages students to learn anything in depth. "The result is a magazine-style book — filled with tidbits but lacking context, adequate explanation or clarifying examples" (Bernstein, 1985). "Textbooks are deceptively comprehensive. . . . Civics textbooks attempt to cover the Constitution, the rights and responsibilities of citizens, federal agencies, state and local government and judiciary, voting, our country's relationship to the United Nations and other countries, the economy and much more. In the sample of textbooks analyzed there was simply too little space to present anything more than basic information about each topic. After using these books, students will know very little about a lot and this can hardly be the desired outcome of a year of studying this important subject" (Woodward, 1986 A). Covering too many topics results in disconnected, illogical, boring and superficial materials (Woodward, 1986 B).

Controversial topics are sometimes omitted.

Since content must be acceptable to buyers in many markets for the books to sell, controversial topics are routinely omitted, particularly when they have been specifically omitted by any of the larger markets. A prime example is treating evolution as theory rather than fact, a treatment tailored to Texas specifications but marketed nationally. "As the largest of the 22 textbook-adoption states, Texas, through its board of education, wields considerable power over the content of science textbooks sold throughout the nation. Publishers simply find it cheaper to take the books prepared for the Texas market and sell them everywhere else than to print special books for Texas only. The changes Texas has demanded [regarding evolution] range from adding qualifying words to removing offending passages" (Moyer, 1985).

Over-simplified material is hard to understand.

Most states require publishers to ensure that books are written so that they are of appropriate reading level for the intended grade levels. Publishers have responded by using "readability" formulas. The simplification of texts required to meet readability formulas frequently makes descriptions more difficult to understand. For example, here is a passage taken from a 6th-grade science text. "In the evening, the light fades. Photosynthesis slows down. The amount of carbon dioxide in the air space builds up again. The buildup of carbon dioxide makes the guard cells relax. The openings are closed" (Armbruster, 1984). The words and sentences are easy to read, but the concept of photosynthesis is nearly unrecognizable. The simple vocabulary, short sentences and lack of connectives are common in textbooks for most academic disciplines.

Revisions are frequently superficial and not well integrated.

As curricular priorities and bid specifications to publishers change, and as states require selected books to have a recent copyright date, basic texts must be revised frequently. The textbook industry is very responsive to the instructional needs of the major markets — at least on the surface. For example, researchers and educators seem to agree that in mathematics greater emphasis on problem-solving, estimation, manipulation and mental computation is necessary if students are to achieve higher levels of competence. Publishers rushed to answer the call for more problem-solving in mathematics texts, but have not adequately addressed the issue. "Texts reflect a misunderstanding about what constitutes a 'problem.' Those that devote sections to 'coin problems' and 'mixture problems' and the rest, are in fact providing a method to approach a particular type of exercise, and a not particularly useful exercise at that. There seem to be very few real problems, questions that require the student to think in a way, or to apply mathematical knowledge in a new way" (ECS, 1986).

Problems with Instructional Design

Graphics are not always appropriate.

Appropriate graphs, pictures and photographs "can illustrate a difficult concept, serve as an example of something described in the text, stimulate interest by combining a visual image with the written word, and extend the content of the text" (Woodward, 1986). But the location and objective of the graphics are not always appropriate to the content being discussed. One recent study found that many photographs ". . . did not serve an instructional purpose. Whether photographs were related or unrelated to the text content and hence served an instructional function appeared to be quite arbitrary" (Woodward, 1986).

Some observers are skeptical about the wholesale inclusion of four-color illustrations. "The use of four-color printing processes is universal among elementary mathematics textbooks. Yet, there is no body of evidence that the use of four-color processes leads to materials associated with improved learning. There is evidence that it improves sales; in fact, it is regarded as necessary for sales. The extra production costs associated with four-color processes may be a luxury" (ECS, 1986).

Many textbooks are poorly organized.

Materials are frequently organized around the usual classroom schedule of a lesson a day, which can cause instruction to be choppy or low-intensity; concepts are treated equally, regardless of importance. Some books are organized in a fashion that insults the intelligence of the children using them — obvious patterns allow students to guess what an exercise will require, merely by its location in the book. Other materials subvert understanding by encouraging students to put one finger on the example and one on the problem and copy (ECS, 1986). Many popular series are rigidly organized, tempting the teacher to march along page by page, following standardized lesson plans. "While the photographs may be attractive and the books conform to modern notions of color design and layout, [textbooks] are seriously deficient when it comes to instructional considerations. These deficiencies, many of which are subtle and take considerable time for a teacher to identify and correct, are going to affect the quality of instruction for hundreds and hundreds of children, year after year" (Woodward, 1986).

Problems with Supplementary Materials

Many teacher manuals lack creativity.

Teacher manuals suffer from many of the same organizational deficiencies as textbooks. Some guides are glorified answer books; others contain material that appears to have been taken out of the textbook so that students can't see it. Often, the textbook can't be used effectively without the guide, which presents primarily content rather than background information or interesting ways of using the material.

High-quality supplementary materials are expensive and time consuming to identify.

Supplementary materials can be used to enrich textbook content. They can help teachers tailor instruction to the curriculum and provide additional activities. But reviewing the hundreds of options on the market takes a great deal of commitment. The supplements offered by the publishers of an adopted textbook are not necessarily the most effective. But, unfortunately, materials that publishers do not include as part of a package deal or offer "free" can be expensive.

Computer software supplements have not had the impact people at first expected them to have. Much of what is available emphasizes an electronic workbook approach and is not always well integrated with written materials. Good software is available, too. But, there is so much of it to choose from that finding effective software is difficult for many teachers.

WHAT CAUSES THESE PROBLEMS? VIEWS FROM THE FIELD

The deficiencies in instructional materials have evolved slowly as a result of the process by which textbooks are developed, marketed, and selected. To find out how the process causes problems, the Education Commission of the States (ECS) in 1985 interviewed acknowledged experts in the textbook field — publishers, state and local administrators, teachers and researchers from around the country. (For a complete report on the interviews, see What's Wrong With Mathematics Textbooks: Views from the Field, ECS working paper 1986). These people were asked to identify problems with textbooks and factors that tend to inhibit improvement. Although most identified new roles for many of the groups affected by textbooks the most striking result was that only a few were able to recognize a need to change their own roles.

In an effort to provide the reader with an overview of the roles and interests of different groups, a fictional discussion of textbooks by an administrator, a publisher and a teacher is reported below.

Administrator: Everyone complains about textbooks, and I would be the first to admit that some improvement is long overdue. But let's face it: we can't do without them, and our immediate options are limited to the materials that are available. We have spent a lot of time and effort developing our curriculum frameworks, and even though we have some influence with the textbook industry we can't call the tune like they do in the major adoption states. We try to select the books that match our curriculum the best. Our resources to buy new materials are very limited and we cannot afford to develop our own.

Publisher: It costs several million dollars to produce a textbook series — so we can only produce one. And we need to be reasonably sure it will sell so we can recoup our investment and hopefully make a profit. The trouble is that disparate selection procedures and standards in the biggest markets make it difficult for us to produce a single set of instructional materials that meets everyone's needs. This makes some materials lengthier than necessary; when we're required to provide too much breadth, depth sometimes suffers. The people who write the state curriculum frameworks are not the people in districts who adopt the textbooks, which means that we get conflicting messages. This further complicates our decisions on content. Of course, sometimes the message is only too clear — we must often omit controversial topics that large adoption units insist we exclude, which can make materials incomplete and unacceptable in other states.

Teacher: Actually, there doesn't seem to be any real difference from one textbook series to the next. Sure, the examples and pictures are different; but the content is very much the same. I know from experience that I will need to skip over some of the material in class, and I use my own supplements to add some depth to the material we cover.

Being on the textbook review committee is a thankless task. We never really have enough time to do the job right, and since the differences between materials are primarily superficial, we spend a lot of time splitting hairs.

Administrator: We have a selection criteria checklist, and I know it takes a lot of time to go through this list during the review process. We are working on a new training process, something that goes beyond the ritual reading of the checklist and the selection process rules. I would like to see the committee composed of more teachers, but my hands are tied — even if the composition of the committee were up to me, I doubt that

we could afford to have so many teachers out of the classroom at one time to review books. The teachers who are on the review committee are really selfless. We try to get substitutes to cover the time they are out of class for committee meetings, but, even so, I know that most of them spend a lot of their spare time looking over the materials. Some reviewers have been on the committees for a long time and will review books their own way no matter what criteria or training we provide. Others volunteer for the job because they have a special interest in seeing that an issue is represented in a certain way, or perhaps not represented at all.

Publisher: One of the most frustrating issues in the industry is the fact that reviewers, and adopting units, rarely buy the kinds of materials they say they want. Bid specifications identify problem-solving, discovery and open-ended work as high priorities in a mathematics textbook. But it is the easier materials, the textbooks that use direct instruction and practice, that actually sell. Sometimes books that change very little between copyrights are selected because they can be used in the same classroom with the older textbooks. It should not be surprising that we pattern our materials on those that are purchased most often: the easy-to-use textbooks with lots of topics, synchronized workbooks and teacher manuals.

Teacher: We have reviewed some really challenging materials in the past, but the consensus on the committee has been that our inexperienced teachers would have trouble using them effectively or they may be too difficult for many of our students. So we frequently end up with a series that our less-skilled teachers can walk through. The sad part of it is that many of us become tied to the textbook's instructional design, which often demands adherence to a rigid format. Creative teachers become frustrated and leave teaching; other teachers go through the book page-by-page, convinced that they are doing the job expected of them.

Administrator: The same issues pop up every selection cycle. Textbooks are so expensive that we can't afford to buy a variety of materials. We have to settle for a series that is really only suitable for teachers and kids with average abilities. We do get a break from the publisher if we buy the complete package: free worksheets, supplements and some inservice training. I know we could do a better job if only we had the time to explore all the supplements on the market and the money to buy some of them. Surely there must be some way of bringing down the cost of textbooks — a single textbook in some disciplines will consume up to $15 of our $20 annual per-student budget.

Publisher: Producing a series is an expensive proposition. Given the diversity of bid specifications from our major markets, and the volume of regulations and requirements, the textbook industry spends enormous amounts of money attempting to respond to the needs of the education community. Physical standards, including everything from paper weight to binding specifications, are strictly regulated. We must provide reports on readability, document how well the textbook correlates to a specific curricular framework, supply data on learner verification revisions — though we understand most of this information is frequently not used. In some markets an on-site sales force is required. In most markets, we couldn't compete at all if we didn't offer free sampling, services and materials. All of this costs money and must be built into the cost of the books.

Teacher: We couldn't possibly verify all the information we receive on a series, so we have to accept it at face value. Reviewers often have so many criteria to check each book against that they rarely have an opportunity to do any more than get through the list. But once the textbook has been selected, it's sometimes embarrassing to admit that you had anything to do with the review process. For one thing, sometimes the

committee's recommendations are ignored, particularly if more than one series, or an expensive set of supplements, is recommended. Worse yet, the materials may simply arrive at the door one day, with a memo indicating when the teacher is to begin using them in class. Then, the old familiar textbook goes out the window, no matter that its weaknesses have already been discovered and compensated for, and despite the fact that the teacher may never have laid eyes on the new one.

WHY IS IT HARD TO IMPROVE TEXTBOOKS?

That improvement of instructional materials is not the sole responsibility of any one group is a major reason that improvement is difficult: neither publishers nor educators can effect real change alone. State regulations, resources, market forces, and teachers' skills and how books are used are just some of the factors that affect the content and quality of instructional materials.

How Textbooks Are Used in the Classroom

Despite the growing cultural diversity of both teachers and students, many educators continue to assume that one textbook for all teachers and all students is a viable option. Yet two teachers will use the same textbook in very different ways. Research has shown that the best teachers are those who have the skills and confidence to improvise. Teachers who lack skills and confidence are far more likely to march through the textbook, page by page and section by section. Unfortunately, textbooks are often selected to accommodate the less-able teacher, which means that rigid instructional designs that encourage teacher dependence predominate.

The problem of overdependence is not a new one, as various observers have pointed out. "A century-and-a-half of organizing, controlling, and monitoring the curriculum through standardized textbooks and their related options has produced a largely unadmitted and largely uncritical, teacher dependence on those materials" (Komoski, 1985). "Over the years, as a result of use patterns, subject matter textbooks have changed from a straightforward compendium of knowledge on a subject to the total curriculum for a year complete with lesson plans" (NASBE/CCSSO, 1985). A predigested curricular approach theoretically relieves teachers from tedious chores, and makes for more uniform instruction. This, in turn, pleases administrators, particularly now that standardized tests are so pervasive. But the flexibility needed to teach students of varying ability is lost when teachers are too dependent on a single textbook.

Students are rarely, if ever, consulted before a textbook is selected. As one researcher notes, they "have no easy means of communicating to publishers and even to their own districts that those materials are not as good as they need to be. As a textbook salesman said to me some years ago, 'the reason for it is simple: the kids don't buy the books.' . . . The usual purchaser-equals-consumer relationship that exists within almost every other marketplace in the economy is aberrantly nonexistent in education." (Komoski, 1985.) Materials are designed and marketed to appeal not to students but to administrators, textbook adoption committees and teachers.

Diverse Curricular Requirements

Textbook adoption states and most large urban districts develop curriculum frameworks or goals that can drive the content of instructional materials. "Texas and California, with Florida a close third, probably have more to do with establishing what will be taught in a given subject area at a given level than any of the other 47 states. . . .[These] states really set the curriculum for the rest of the United States" (Schomburg, 1986).

The reasons these states exert such influence are economic. In 1985 Texas spent nearly $100 million on instructional materials, California spent over $130 million and Florida spent about $54 million. Those purchases accounted for over 20% of the national

market. Publishers respond by primarily meeting the differing requirements of all three states and some large urban districts in a single book or series. This has resulted in books that are crammed with content, books in which a multitude of topics are "mentioned" rather than fully developed. (Publishers sometimes compound the problem by adding a few extra topics not covered by the competitors so that their sales people will have some talking points.) Since major textbook publishers maintain that they cannot afford to produce different books for different markets, textbooks and series are conceived or edited to sell well in a few of the largest markets.

Testing

This is the age of accountability in education — 49 states have some type of testing program to assess student skills. Theoretically, tests are developed or selected to match curriculum guidelines or goals. Ideally, text selection criteria reflect curriculum goals. Far too frequently, however, materials are selected to match local standardized tests or the (sometimes minimal) skills measured by a state assessment. In mathematics, for example, "tests lag; out-of-date tests reward mechanical skills and have a stagnating influence on textbooks. There is little in the way of estimation, calculator/computer use, open-ended problem solving and related activities in the tests, yet these are important goals for the mathematics curriculum" (ECS, 1986). A few states are now tying resources to test results; the temptation to teach to the test in these states is very high.

Further, heavy reliance on testing can restrict the curriculum, even as increased graduation requirements attempt to expand it. "Many of the state and district responses to the movement for tougher requirements have had a harmful effect in freezing certain things in place and in focusing teachers' (and textbook writers') attention even more on what the tests are testing. For example, requirements that all college-bound students take two years of algebra and one year of geometry have thwarted attempts to integrate algebra, geometry, statistics, and computing into a three- or four-year sequence. Teachers are abandoning tentative attempts to introduce more problem-solving activities into the mathematics curriculum because such activities are not covered on standardized achievement tests or state minimum standards tests" (ECS, 1986).

Funding for Instructional Materials

Funding for all instructional materials is now less than 1% of the average adopting unit's entire budget (Farr & Tulley, 1985; Kirst, 1984). Although many states have increased funding for books, textbooks now claim a smaller portion of school budgets than they did 15 years ago. In the last school year, when average per-pupil expenditures were $3,429, textbooks accounted for less than $28 (Solorzana, 1986). With so little money available, the cost of materials can easily outweigh other considerations during the text selection process. Many school districts are now forced into adopting a single text series that is not appropriate for all ability levels; some districts must keep materials for as long as 12 years because they cannot afford to buy new books.

Sales and Promotional Costs

Statewide adoption of textbooks was originally seen as a way to lower the cost of textbooks "based on the premise that large volume purchases could tempt publishers into significant discounts. Recent studies show that there are marginal benefits to large

volume purchasers, primarily because smaller jurisdictions have enacted "most favored nation" clauses in their adoption regulations, which force publishers to sell them the books at the lowest price charged elsewhere" (Bernstein and Woodward, 1986).

Nevertheless, there is a very real difference between what the large-volume and small-volume buyers receive for their money. Several years ago, as the "most favored nation" clauses began to take hold, one textbook company hit on an idea sure to differentiate its product — free materials. Large-volume buyers were offered free supplementary materials to go along with the textbooks they purchased. In no time, the practice became universal, to the point where texts that are not accompanied by a raft of "freebies" may not be considered in competitive adoptions at all.

But, of course, freebies are not free. The large-volume buyers enjoy a certain advantage in terms of how much material they receive. But, in the long run, everyone pays a higher price for materials. The freebie game is no longer a matter of choice for publishers. In adoption states, local selection committees may assume that the state has reviewed materials and the adoption process becomes a different kind of competition, in which the publisher who gives away the most wins. In open-market areas, committees may narrow the choice down to a few series, and then begins the freebie game. Are all these free materials evaluated for quality or relevance to the curriculum?

Another major expense to publishers occurs in making books available in adoption states during the selection process. Publishers spend up to 10%-15% of their anticipated revenue on sampling, evaluation and promotion for an elementary series (Hawke & Davis, 1986). Only large publishers selling a large number of books can afford such expense.

Adopting units frequently require publishers to provide huge amounts of data, such as correlational analyses "proving" that materials meet curricular requirements, or learner verification revision statements. The costs to prepare these reports are high, and, in the case of correlational analyses, their utility is dubious. Since most series at least mention a topic, most correlational analyses are high. However, adopting units may not examine how well and how deeply a topic is covered.

Market Forces

Publishers react to market demands: they must publish materials that will sell. They can point to sales data showing that traditional content is what the consumers actually buy, no matter what consumers say they want. They tell true stories of innovative materials, developed at high cost and widely praised by the experts, that never sold. Nevertheless, the textbook industry does respond to instructional trends, and it does react to state and local officials' new requirements, though too often this means merely including new catchwords in new materials, or adding a small amount of new content to existing material.

The creation of a textbook takes three to four years. A typical high school English text can cost $100,000 to develop (O'Donnell, 1985); a series for elementary schools can cost up to $3 million to develop over five years. With so much investment on the line, publishers take a conservative approach to what will sell. It is no wonder that so many textbook series look so much alike; innovation traditionally does not sell well, and a series that <u>does</u> capture a large share of the market is likely to be copied by the competition for years to come.

Readability Formulas

Readability formulas are a good idea gone awry. Educators believe that students are best able to read and understand books written to their grade level. Readability formulas, which use data such as average length of sentences and vocabulary difficulty, are used to predict text difficulty. But there are two major problems with readability formulas as measures of how well textbooks can be understood. "First, readability formulas fail to take into account many characteristics of text that are known to affect comprehension — for example, content difficulty and familiarity, organization of ideas, author style, page layout. The most popular formulas use only two aspects of a text in computing readability levels: word difficulty and sentence length. . . . Second, readability formulas neglect characteristics of readers that affect comprehension — such as their motivation, interest, purpose, perseverance" (Armbruster et al., 1985).

States require publishers to produce texts within certain readability levels. In response, publishers frequently use readability formulas as the basis for writing. Since most readability formulas are based on sentence length, sentences are shortened by separating clauses and deleting connectives such as "and," "but" or "because." The reader must then infer the connectives and often, causal relationships. The result is frequently books that are harder, rather than easier, to understand.

Physical Standards

Most states have set extremely stringent physical standards for textual materials that prevent publishers or adopting units from exploring options to the rigidly constructed, hardcover textbook. The standards detail everything from print size to paper weight, from margin space to the number of stitches in the binding. These requirements, sometimes combined with the demand that publishers post bonds of $10,000 or more, serve to keep smaller publishing companies out of the elementary/secondary textbook market. Local publishing companies could offer materials tailored to an adopting unit's specifications, but few can afford to meet these physical standards to enter the competition.

Managed Texts

Because textbooks are frequently no longer written by individuals, writing quality tends to vary considerably within any given book or series. Textbooks are most often written in pieces, then assembled and coordinated by the publisher's in-house editorial staff. Take a reading series developed by 17 writers, for example: "Eight writers were from colleges and universities, seven from public schools, and two from state education departments" (O'Donnell, 1985). One can't assume that a well-known author's name on the jacket assures high quality, consistent writing or even that the work was completed by the author!

PITFALLS OF THE ADOPTION PROCESS

The Process

Just under half of the states conduct statewide textbook adoption, meaning that some state entity (the state board or a special committee, for example) reviews instructional materials and generates a list of approved books from which schools or districts may choose. The remaining non-adoption or "open-market" states allow local autonomy in the selection of materials.

But the actual adoption process is not a neat division of the states into adoption or non-adoption camps. In adoption states the state role varies from restrictive to quite open. Some states approve only a limited number of texts or text series, stimulating stiff competition among publishers to get their books on the list. Other adoption states approve virtually every series, and several allow local agencies to use state funds for unapproved materials if the purchase can be justified. In some open-market states, state education agencies review materials for placement on a recommended list, develop selection criteria, or provide consultants to assist local reviewers during text selection. In other open-market states, textbooks are strictly a local affair.

Despite differences in the process of textbook selection, there are a great number of similarities. In the long run, all districts must make some textbook decisions. Most have access to written criteria for making those decisions, and most have identified who will be responsible for deciding. The objective in textbook selection is to choose materials that best suit the unit's curriculum goals at the lowest possible cost. Textbook packages are expensive, and so is paying for release time for teachers, training and consultants.

The Reviewers

Choosing a committee to select instructional materials is sometimes a highly political process, whether the committee is appointed by state officials or school principals. At both levels, cronyism and close relationships among longstanding committee members, education staff and publishers' representatives are not unusual. Appointments are frequently based upon community role (e.g., teacher, administrator, parent), though sometimes they are determined by geographical factors or the need to repay political favors.

In the ECS survey, it was found that reviewers are only occasionally chosen solely because of their mathematics background or experience with the curriculum and text selection. "State and local decisions are made by textbook adoption committees whose majority membership doesn't have enough knowledge of the mathematics curriculum or its instruction to make appropriate selections" (ECS, 1986). But plans to consult with these experts during the selection process are now being implemented in several adoption states. Many teachers in a small district are able to work together on textbook selection. In larger districts, the best teachers can usually hope for is representation on a committee that chooses for the whole district.

The inclusion of teachers on adoption committees, however, does not necessarily lead to the selection of appropriate materials. Experienced teachers usually have very little extra time, and rarely are they offered incentives to participate in the selection process. So committees usually consist of volunteer teachers, who may or may not be the best qualified people to make selection decisions.

Convenience may determine who selects textbooks. In at least one state, vocational education teachers and mathematics teachers jointly chose materials for both disciplines, simply because voc-ed and mathematics were on the same adoption cycle. Parents and other lay people often play a role in the selection of materials as well.

Members of state adoption committees frequently receive some training in the workings of the selection process and how to fill out evaluation checklists or criteria sheets. A few states and large districts provide written materials about the curriculum, student assessment programs, mathematics trends, and what to look for in textbooks. But, more commonly, reviewers get only a few hours of training and a copy of the criteria, rules and regulations. Members of local committees are less likely to receive training, but courses and programs on text selection are sometimes available through colleges of education, professional organizations and consultants. Some states supply information on training programs that will help local committees focus on priority issues in textbook review.

Currently, the publishers' representatives are the only outside experts that many local committees consult. Although curriculum specialists are available in some states to assist in the selection of materials, these experts are not often asked to participate in the local process (ECS, 1986).

Selection Criteria

"Criteria to select materials are better than in the past, but there is a bias toward inclusion of content rather than intelligent setting of priorities" (ECS, 1986).

Most adopting units have access to written criteria to guide the selection process. State education agencies may provide checklists or evaluation sheets, and districts often develop their own criteria. Professional organizations and subject area groups such as the National Council of Teachers of Mathematics offer advice and model criteria. Unfortunately, the criteria are often used poorly, unless adequate training is provided. Checklists are lengthy and unfocused. A 1985 study found up to 180 items on criteria lists, and an average of 73 items to check on each book submitted for review. The sheets seemed to give equal weight to all factors and tended to "emphasize only the existence of a particular factor rather than its quality." Only 1 item was common to all 70 sheets — recent copyright date (Farr & Tulley, 1985).

Obviously, the time required to qualify even one textbook series against so many factors is considerable. Items that are most easily checked are often the least relevant. Copyright date is a good example. Theoretically, a very recent date means that content and instructional design are up-to-date. Publishers are aware that "recent copyright date" appears on the lists of criteria, so they make every effort to ensure that their line of materials sports the latest date possible (or, even impossible: materials dated 1987 are offered for review in 1986). Also easily checked but often misleading are data such as correlational analyses and readability scores.

In fact, selection criteria may have had a stronger impact on how publishers design and present materials than on materials selection. Teachers are rarely given nearly enough time to really qualify instructional materials against weighty criteria lists. Instead, they often rely on tables of contents, indexes, scope and sequence charts and "thumb tests." Even some large adoption states do not follow their own criteria well; committees choose texts that neither fit the criteria nor match what they call for in content (ECS, 1986).

THE REAL COSTS OF POOR TEXTBOOKS

There is a tension among educators about the proper role of textbooks. Should textbooks provide the form and focus of basic instruction, right down to the daily lesson plan? Or does this approach lock teachers into a rigid framework, from which only the strongest can deviate? Critics argue that teachers are in danger of becoming de-skilled. Proponents believe that teachers have been freed for higher levels of teaching.

The debate only rarely considers the effects on students. Some learners benefit from predictable instruction, particularly if materials are carefully chosen to suit their abilities. Some chafe under the restrictions of a pre-packaged curriculum; others face a constant struggle to keep up. There are no absolute rights and wrongs, but the chances for a successful encounter between teacher and student increase when the teacher understands what instructional materials can and cannot do and can tailor materials to a wide range of student abilities. The materials available today, and the way they are used in the classroom, can have a negative effect upon many teachers and students.

The Teachers

"Dropping a new approach on an unprepared teacher is like trying to insert a three-pronged electrical plug into a two-holed outlet. The teacher will either 'trash' the new approach or bend it to familiar methods; elementary school modern math materials offer an excellent example" (ECS, 1986).

It isn't too unusual for teachers to first see new materials the same day they are expected to begin using them. Those who have been through it before know better than to argue; they simply take the prepackaged lesson plans home and try to figure out some way of making it meaningful in the classroom. Teachers who lack the confidence or skills to work around a program's deficiencies are left to plod through the materials completely dependent on the text for direction.

Some districts offer inservice programs before a new series is introduced, but teachers are not usually brought together to discuss a textbook after they have had time to become familiar with it. Since problems with the program are rarely communicated formally, no mechanism exists to share solutions with other teachers.

Publishers also offer preliminary training. But since district officials rarely question the nature and scope of this training, its value is difficult to judge. Once the sale has been made, publishers' representatives are committed to making the program work. Some will even identify a program's weaknesses and suggest ways to overcome them. But even if training were 100% successful (which is unlikely), the result would be to make teachers more dependent on the textbook than ever.

The danger in overdependence on textbooks is this: if educators continue down the road of technocratic control, where teachers are de-skilled (with no need to think, do lesson plans, or respond individually to the needs of their students) teaching will become so unattractive that highly qualified college graduates will not consider teaching as a profession.

The Students

"Textbooks really cannot show enough variance to serve all of the special groups. The result is a compromise — minimally serving what is common to all student populations" (ECS, 1986).

Poor or inappropriate textbooks have a negative impact on virtually all students. Often only one set of materials is chosen to meet the needs of all children at the same grade level. Texts used in the primary grades are generally geared toward the average child, at the middle ability level; texts used in traditional secondary schools are often shaped by college entrance requirements.

Some learners suffer more than others as a result of thoughtless textbook selection, inadequate content, and improper design. Even the mythical average child has trouble benefiting from poorly designed materials. High-achieving elementary school students and college-bound secondary students are likely to overcome the effects of a subject matter background limited by the use of single texts. But because they are considered more able to cope with whatever is handed them, their particular needs are sometimes ignored. Some hope can be found in the current growth of programs for gifted and talented students. Although such programs are not available to all high-achievers, those who are able to participate will most likely find more challenging materials in use.

Low achievers are the least likely to succeed with materials geared toward the average student. In the ECS survey of priority issues related to mathematics textbooks, one person noted: "From their earliest days in mathematics class, we force these kids to be remedial, and society, because of this, guarantees a mathematical underclass" (ECS, 1986). Because low-achievers get inappropriate materials and, often, the poorest teachers, they are doubly shortchanged. If, because of the perception that materials have been "dumbed down," texts are made more difficult across-the-board, low-achieving students will be strongly affected: "Increasing difficulty of texts may result in more harm, because low achievers can't cope and they will drop out in greater numbers" (ECS, 1986).

The impact of inappropriate textbooks is graphically illustrated in a 1985 report of the results of an EPIE Institute study. This study found that "In affluent schools, 60% of learners scored 80% or better on a September test of the content of the books that had been purchased for their year-long use. When those students were retested nine months later, their test performance regressed. The same study found that 87% of students in poorer districts, who scored very low . . . on a pretest of the contents of books purchased for their year-long use, showed no improvement on the post-test administered after they had used their assigned text for nine months" (Komoski, 1985).

OPTIONS

There are options to the current system, but there are no global solutions. The policy options identified below will not, in and of themselves, change textbooks, but they may lead to changes in the forces that inhibit or promote the creation of better textbooks.

The recommendations offered to administrators far outnumber those offered to other groups because change hinges on state and local administrators committing themselves to improving textbooks, and backing that commitment with action. Their leadership and ability to communicate well with both publishers and teachers is essential to the change process.

OPTIONS FOR ADMINISTRATORS AND POLICY MAKERS

The Adoption Process

1. Review textbook selection criteria and regulations to make sure they are having their intended impact.

   Some well-intended regulations can have some unintended negative consequences. Make sure bid specifications and regulations are serving their intended purpose and are resulting in the development and adoption of high quality instructional materials.

2. Use a limited number of useful selection criteria.

   Reviewers have difficulty in using long lists of criteria. Focus on a limited number of criteria which address specific needs of a district or state. Using assessment results can help an adopting unit determine curricular strengths and weaknesses as part of a needs assessment. The result of the needs assessment can help identify which selection criteria are the most important to include.

3. Ask publishers to provide information which is informative and useful.

   Information, such as correlational analyses, may be deceptive. These analyses, which indicate how well a textbook covers the required curriculum content, are only indicators. They cannot measure how well or in what depth the content is presented.

4. Select textbook reviewers who know the subject matter.

   Experienced teachers with a strong subject-matter background are the best choices for instructional materials review committees. Good reviewers are knowledgeable about current trends in the subject area and can recognize good instructional design and writing.

5. Provide reviewers with adequate information and training.

   Reviewers should know: (a) the adopting unit's curricular goals, (b) the selection criteria and how to apply them, (c) the latest trends, research and thinking in the discipline, and (d) the kinds of materials on the market and their most appropriate use. Training should include applying the criteria to sample materials and giving good and poor examples of each criterion.

6. Give teachers adequate time to review instructional materials.

   Doing a good job of reviewing numerous texts or series takes time. Teachers need to have release time if the review takes place during the school year or a stipend to do the review during the summer if they are expected to apply the selection criteria responsibly.

7. Share existing critical reviews of instructional materials with reviewers.

   During the past two years, several organizations have reviewed popular textbooks in the fields of history, biology and science. Make this information available to reviewers and those responsible for selecting textbooks.

8. Develop ways to identify the effectiveness of textbooks.

   Whether field testing is undertaken or an informal survey of teachers' opinions is made, the results can be useful information to the next selection cycle or used to identify areas of weakness in the text which can be supplemented. Feedback from these activities should also be shared with the publisher of the materials so that changes can be incorporated in the next edition.

Relationships with Teachers

1. Encourage preservice and inservice teacher training on selecting and using instructional materials.

   Encourage teacher training institutions to offer high quality preservice courses in selecting and reviewing instructional materials. Inservice assistance can be provided by staff from state departments of education, colleges and universities and sometimes from professional organizations. Teachers need to know how to select appropriate instructional materials, be able to identify and overcome their weaknesses and understand what textbooks can and cannot do.

2. Support teachers who wish to develop their own instructional materials.

   Encourage teachers to develop their own instructional materials or make resources available for teachers to purchase commercially available supplemental materials.

3. Take advantage of mentor teacher or career ladder programs that enable experienced teachers to help other teachers select and use instructional materials.

   Administrators should offer incentives to teachers who are willing to develop and share their expertise in selecting and using textbooks.

4. Give teachers the opportunity to discuss problems associated with instructional materials.

   Teachers need opportunities to exchange ideas for adapting materials to students' needs.

5. Support professional development for teachers.

   The more comfortable and knowledgeable teachers feel in teaching the subject matter, the more likely teachers will select high quality instructional materials which

will promote student learning.

Assistance and Resources

1. State education agencies should provide technical assistance to districts.

   State education agencies should develop materials and guidelines for the appointment and training of local selection committee members. States should also provide on-site technical assistance when requested.

2. Explore alternatives to textbooks.

   A wide variety of materials exist which could form the basis for instruction. These can include consumable materials, teacher-made curriculum materials and inexpensive paperback books. Most of these are frequently not considered because they don't meet the stiff physical requirement standards for durability.

4. Increase funding for instructional materials.

   Increased funding would allow for the development and purchase of more supplemental materials, books for different ability students and even permit districts to shorten their adoption cycle and use more current books.

5. Develop a uniform policy for "freebies".

   Consider saying "No" to freebies. Or, require publishers to supply the same free materials to all districts within a state who purchase that publishers materials.

6. Consider forming a consortium of districts to help review instructional materials.

   Districts with similar curriculum goals and philosophies should consider pooling their staff and resources to review (and possibly purchase) instructional materials.

7. Be sure the review and selection process is adequately funded.

   Adequate review and selection of instructional materials takes time. For teachers to do a good job, they need to be released from some of their other professional responsibilities.

Evaluation and Communication

1. Collect and share information on instructional materials.

   Data should be collected from schools on the effectiveness of textbooks. This information should be shared with publishers and potential purchasers. State and district "clearinghouses" of information should be organized.

2. **Make improving instructional materials a high priority.**

   Communicate to publishers and educators that the development and selection of high quality instructional materials is essential. Provide the necessary resources and assistance to make this a high priority.

OPTIONS FOR TEACHERS

1. **Insist on a role in selecting instructional materials.**

   No one knows student needs better than teachers. Be actively involved in the selection of materials you will use.

2. **Develop your own materials.**

   Identify weaknesses in commercial materials once they have been used. Develop your own materials to overcome or even replace some of these commercial materials.

3. **Share information about instructional materials with other schools and districts.**

   Document problems with textbooks and work with other teachers on how to solve them. Send information to the publisher and check to see if revisions were made before the next adoption cycle if the book will be considered again. If you are considering adoption of a textbook series, check with other schools or districts who are using the materials for a review or recommendation.

OPTIONS FOR PUBLISHERS

1. Develop high quality instructional materials.

   Integrate new trends and research findings into high quality instructional materials. Insure that there is thoughtful integration of content, instructional design and graphics.

2. Innovate.

   Explore ways of getting less-expensive materials on the market. Design more open-ended materials that allow teachers to initiate activities and follow-up in their own ways.

3. Be proactive.

   Publishers have a long history of reacting to state demands and market forces. Be proactive in communicating to state and local leaders the practices, policies and regulations which hamper publishers in producing high quality materials.

4. Find alternatives to using readability formulas.

   The problems with using readability formulas as a writing tool are well documented. Let states and districts that insist on readability scores know about these problems. Develop valid alternatives to identify text difficulty which don't affect text coherence.

5. Put more resources into field testing.

   Make learner verification and pilot data more comprehensive and widely available. Encourage writers to work with researchers to see whether different approaches to presenting materials will help increase student learning.

OPTIONS FOR PROFESSIONAL ORGANIZATIONS

1. **Identify subject matter core curricula.**

   Develop a consensus about what students should learn about a subject and in what sequence. Support research into how textbooks are used, what should be included in high quality books, how texts work for students of different abilities and how teachers use textbooks. Develop model adoption processes and selection criteria.

2. **Support independent review panels.**

   Organize and fund independent panels to review instructional materials objectively for readability, grade and ability levels, currency, accuracy, depth of coverage, organization, topic appropriateness, etc. Disseminate findings to organization members.

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